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I, CASSANDRA RICHARDS, TEAM LEADER EXAMINATION SUPPORT
AND SALES hereby certify that annexed is a true copy of the Provisional
specification in connection with Application No. PQ 8181 for a patent by
ARLEC AUSTRALIA LIMITED filed on 15 June 2000.



WITNESS my hand this
Eleventh day of July 2001

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Arlec Australia Limited

A U S T R A L I A
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PROVISIONAL SPECIFICATION
for the invention entitled:

"LED LAMP"

The invention is described in the following statement:

LED LAMP

Field of the Invention

The present invention relates to an LED lamp.

5 Summary of the Invention

In accordance with the present invention, there is provided an LED lamp including first and second terminals and a plurality of LED junctions coupled between the terminals, wherein the junctions are embedded in a unitary body of a globe portion of the lamp.

10 Preferably, the junctions are formed on a wafer so as to be substantially adjacent and a common phosphor layer is applied over the junctions.

In another aspect, there is provided an LED lamp having first and second terminals and a plurality of LED junctions coupled between the terminals, wherein the junctions are substantially adjacent and a common phosphor layer is applied over the junctions.

15 Preferably, the terminals are in the form of leads and the LED junctions are provided in an integrated circuit wafer, with one of the terminals including a support platform to which the wafer is attached.

Preferably, conductors are provided between the wafer and the terminals to electrically couple the LED junctions to the terminals.

20 Preferably, a resistive component is connected between one of the conductors and an associated lead.

Preferably, the lamp includes a globe portion with the terminals, wafer and conductors embedded therein so as to form a unitary body.

Preferably, the LED junctions are arranged in reverse polarity in order for the lamp to operate with an AC or DC power source.

Brief Description of the Drawings

The invention is described, by way of non-limiting example only, with reference to the accompanying drawings in which:

- Figure 1 is a side-view of an LED lamp;
- 5 Figure 2 is a plan-view of the lamp of Figure 1; and
- Figure 3 is a circuit diagram for the lamp of Figures 1 and 2.

Detailed Description of a Preferred Embodiment

- The lamp1, as shown in Figure 1, includes a globe portion 2 with a cylindrical base 3 and a parabolic end 4, configured to enhance illumination output in an axial direction of the
- 10 lamp. The lamp also includes first and second terminals, which are preferably in the form of leads 5,6 which are embedded within the globe portion 2. The lead 5 has a support platform 7 to which is mounted an integrated circuit wafer 8. In the example given, the wafer includes two junctions which are arranged substantially adjacent each so that a common phosphor layer may be applied over both junctions. Conductors 9 to 13
- 15 electrically couple the junctions to the respective terminals 5,6 so that the LED junctions 14,15 are arranged in reverse polarity, as indicated in the circuit diagram Figure 3. A resistive element 16 is provided between the conductor 13 and the lead 5.

- The terminals 5,6 conductors 9 to 13 and wafer 8 are all embedded within the globe portion 2 so that the lamp is presented as a robust unitary structure. The reverse polarity of
- 20 the junctions allows the lamp to be connected to a power source without concern for polarity, as compared to the case with a conventional LED arrangement. The use of a single phosphor layer, common to each of the junctions, also simplifies manufacture and provides an aesthetic advantage in that the light from either junction is perceived to originate from a single source.

- 25 In a preferred form of the LED lamp, the following specifications may apply:

| | | |
|--------------|---|----------------|
| NOMINAL SIZE | - | 9.5mm diameter |
| LIGHT COLOUR | - | WHITE |

- 4 -

| | | | |
|----|-------------------|---|--|
| | LENS COLOUR | - | WATER CLEAR |
| | LIGHT INTENSITY | - | SUPERBRIGHT |
| | | | TYPICAL LIGHT OUTPUT > 500mCd @ 20mA |
| 5 | GUARANTEED LIFE | - | 30,000 HOURS |
| | FOCUS | - | HALF ANGLE 15° typ. |
| | BASE STYLE | - | INTERCHANGEABLE WITH WEDGE TYPE LAMPS |
| | LEAD DIMENSIONS | - | 6mm nom. OUTSIDE BASE WEDGE |
| | SUPPLY VOLTAGE | - | 12VOLTS nom. {>11.5<14 volts AC or DC} |
| | FORWARD CURRENT | - | 20 +8/-3 mA @ 12Volts |
| 10 | FORWARD VOLTAGE | - | 3.6 min(typ) 4.0max. @ 20mA |
| | REVERSE VOLTAGE | - | 5Volts min. |
| | POWER DISSIPATION | - | LED JUNCTIONS 120Mw |
| | | | RESISTOR 170mW |
| | REVERSE CURRENT | - | 50 x 10 ⁻³ mA max. @ 5V |
| 15 | INTERNAL RESISTOR | - | 430 ohms nom. |

It should, however, be appreciated that the size configuration and operating parameters of any of the component parts of the lamp may vary, as required and the number of LED junctions may also be increased to suit illumination needs.

Further, it should be appreciated that the LED lamp has been described by way of non-limiting example only, and many modifications and variations may be made thereto without departing from the spirit and scope of the invention as hereinbefore described.

DATED this 15th day of June, 2000
ARLEC AUSTRALIA LIMITED
 By DAVIES COLLISON CAVE

Patent Attorneys for the applicant

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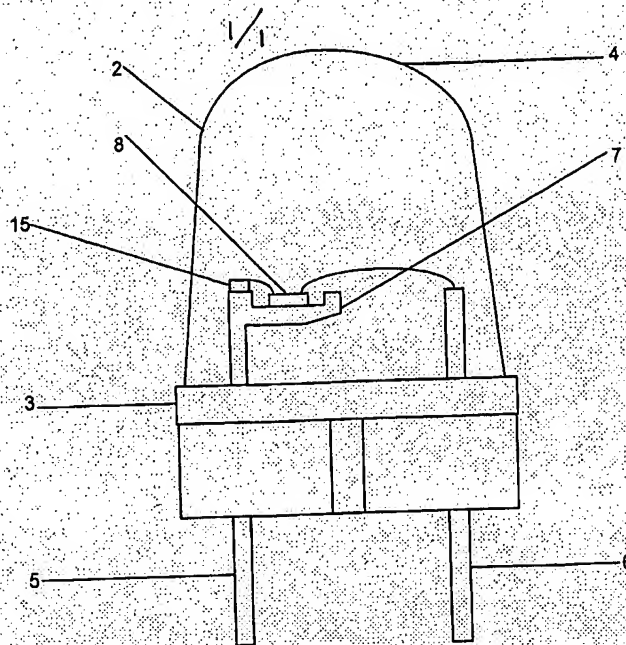


FIG 1

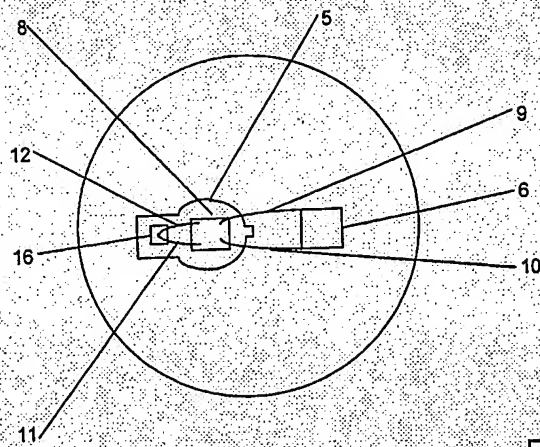


FIG 2

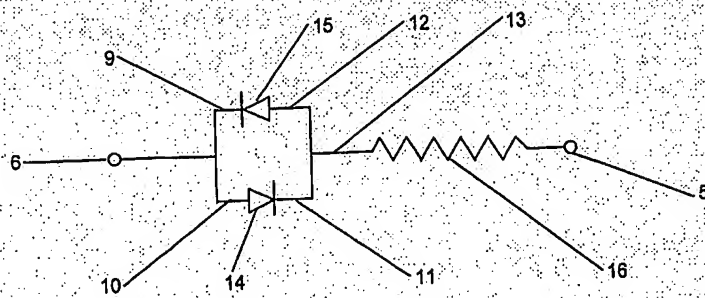


FIG 3